New record of a surgeonfish from Oman with notes on some uncommon rays

by

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RÉSUMÉ. - Nouveau signalement d'un poisson chirurgien d'Oman avec notes sur quelques raies peu communes.

Ce rapport documente une extension significative de l'aire de distribution dans la partie nord de la mer d'Arabie d'un poisson chirurgien (*Acanthurus xanthopterus*) de l'Indo-Pacifique, confirme la présence en Oman d'une raie guitare (*Rhinobatos annulatus*) du sud-ouest de l'océan Indien, apporte de nouvelles informations au sujet d'un autre raie guitare mal connue (*Rhinobatos salalah*), et mentionne un cas de morphogenèse anormale du rostre chez une raie papillon (*Gymnura poecilura*).

Key words. - *Acanthurus xanthopterus* - *Rhinobatos annulatus* - *Rhinobatos salalah* - *Gymnura poecilura* - ISW - Oman - Anomaly - Records.

The ichthyofauna of the Sultanate of Oman is much better known because of Randall's studies in the 90's, culminating with the book "Coastal fishes of Oman" (Randall, 1995). Other publications are less well known (Al-Abdessalaam, 1995) or deal with more regional inventories (Manilo and Bogorodsky, 2003). Nevertheless, work still remains to be done on fish taxonomy and ecology in the area, especially in the Persian Gulf and Gulf of Oman, as demonstrated by recent new descriptions (*e.g.*, Winterbottom, 2000; Carvalho *et al*., 2002; Baldwin, 2005).

The Persian Gulf and the Gulf of Oman are included in the Arabian Sea ecosystem whose southern limit is defined by the line between Cape Guardafui, the Horn of Africa (the north-east point of Somalia) and the Cape Comorin (the southernmost tip of India). In fact, in the same way that the Red Sea is often treated separately, and despite their different level of endemism, the Persian Gulf should also be regarded as a distinct ecosystem due to its unique oceanographic conditions (Carpenter *et al*., 1997; Manilo and Bogorodsky, 2003). Also, Briggs (1974) considers the Gulf of Oman as a zoogeographic boundary between the Western Indian Ocean and the Indo-Polynesian Provinces.

This report documents a significant range extension into the northern part of the Arabian Sea of a wide-ranging Indo-Pacific surgeonfish (Acanthuridae), confirms the presence in Oman of a southwestern guitarfish (Rhinobatidae), brings new information about another poorly known guitarfish, and mentions a case of anomalous morphogenesis in a butterfly ray (Gymnuridae). These observations were made during a 3-week field trip (14 Jan.-2 Feb. 2008) to the Ash Sharqiyah coast, the easternmost part of Oman (Fig. 1). The specimens could not be kept complete, and only the skeletons of the surgeonfish and guitarfishes could be saved and are now part of the Muséum national d'Histoire naturelle (MNHN) osteological collection. The butterfly ray was only observed and photographed.

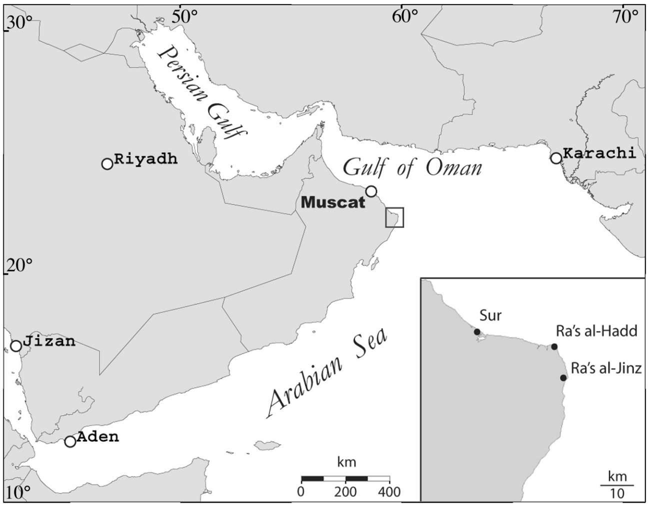

Figure 1. - Map of the study area showing the locations of the fishermen villages (created with www.aquarius.geomar.de).

The acanthurids, a family of marine fishes usually associated with coral and rocky reefs in tropical and subtropical waters worldwide, comprise 80 species (Randall, 2002). In Oman, 13 species have been recorded, of which 5 belong to the genus *Acanthurus* (Randall, 2002). The guitarfishes are benthic rays represented by some 53 species worldwide (Eschmeyer, 2008). The most speciose genus, *Rhinobatos*, is represented in Oman by 4 species (Randall and Compagno, 1995). The small family Gymnuridae is represented in Oman by the single wide-ranging Indo-Pacific long-tail butterfly ray (Randall, 1995).

RESULTS AND DISCUSSION

Acanthurus xanthopterus Valenciennes, 1835

Material examined. - One specimen, caught with a fish trap (*gargoor*) at Ra's al-Hadd on 24 Jan. 2008 (Fig. 2). The skeleton is housed in the MNHN fish osteological collection under the number MNHN:ICOS-00187.

Morphometric data. - 384 mm TL, 285 mm SL, 79 mm head length, 960 g total weight.

Distribution. - The yellowfin surgeonfish is a wide-ranging Indo-Pacific species, found from East Africa to the tropical Eastern

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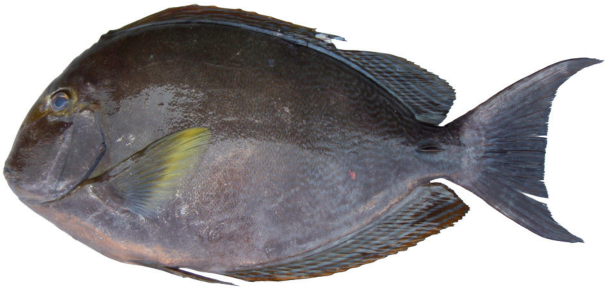

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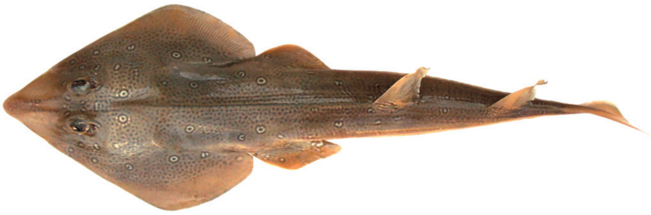

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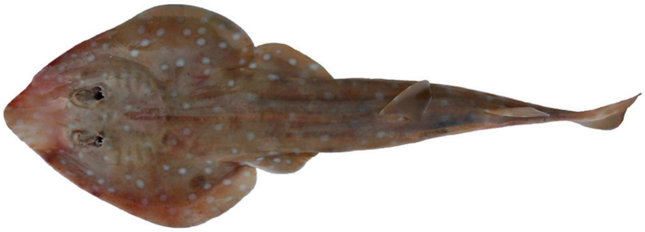

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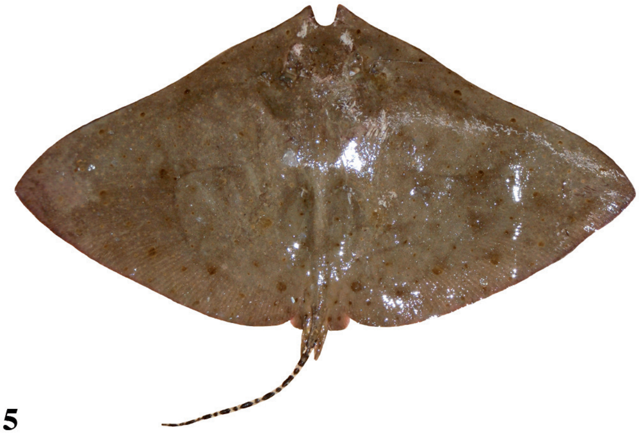

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Figure 2. - *Acanthurus xanthopterus*, 384 mm TL, Ra's al-Hadd, Oman.
Figure 3. - *Rhinobatos annulatus*, 946 mm TL, Sur, Oman.

Figure 4. - *Rhinobatos salalah*, 511 mm TL, Ra's al-Jinz, Oman.
Figure 5. - *Gymnura poecilura*, ± 300 mm DW, Muscat, Oman.

Pacific (Randall, 2002). Randall (2001) considers it as absent from the Red Sea to the Persian Gulf. Manilo and Bogorodsky (2003) mention its presence along the western coast of India and eastern coast of Somalia, but not along the coast of Oman. Al-Abdessalaam (1995) reports *A. xanthopterus* but the photograph (p. 47) represents another species, probably a large *Acanthurus mata* (Cuvier, 1829). The photograph (p. 45) of *Acanthurus bleekeri* Günther, 1861 (a junior synonym of *A. mata*), represents a younger stage of *A. mata*. As Al-Abdessalaam's report of *A. xanthopterus* is likely based on a misidentified specimen, we consider our record as new, and extending the known range of the yellow surgeonfish into the Arabian Sea ecosystem, north to the entrance to the Gulf of Oman.

In Oman, dead specimens of *A. xanthopterus* could easily be confused at first glance with *Acanthurus dussumieri* Valenciennes, 1835, or *A. mata*. Our specimen displays orange dorsal and anal fins, with 4-5 longitudinal blue stripes and a blue-grey stripe at the base, and pectoral fins with the distal third yellow (Randall, 2001).

***Rhinobatos annulatus* Müller & Henle, 1841**

Material examined. - One female obtained at Sur fish market on 26 Jan. 2008 (Fig. 3). The skeleton (vertebrae) is housed in the MNHN fish osteological collection under the number MNHN:ICOS-00194.

Morphometric data. - 946 mm TL, 306 mm disc width (DW), 131 mm preoral length (POL), 2550 g total weight (TW).

Distribution. - The lesser guitarfish is typically known to occur only in South Africa, from the Cape of Good Hope to Natal (Smith and Heemstra, 1991). Records of the species in Oman's coastal waters (Fouda and Hermosa, 1993) have been considered as questionable and not taken into account by Randall and Compagno (1995). However, the species is cited by Al-Abdessalaam (1995) and the corresponding photograph is a specimen closely resembling ours. Henderson *et al*. (2007) mention in their survey of the elasmobranch fishery of Oman two known species, *Rhinobatos halavi* (Forsskål, 1775) and *Rhinobatos punctifer* Compagno & Randall, 1987, and two supposedly undescribed ones, although the photograph of one of these (RHY) seems to correspond to *R. punctifer*. The other (RHX) seems different from our specimen and could effectively represent a new species.

This specimen comes from Sur's market, which only serves local fishermen, without any long range (> 100 km) import of catch, and it is indeed surprising to find specimens of *R. annulatus* so far from their generally accepted distribution range. However our specimen corresponds well to the South African ones (Smith and Heemstra, 1991): rear margin of each spiracle with two dermal folds; sides of rostrum lighter than rest of body and without spots; disc and tail covered with small dark brown spots and ocelli consisting of bigger dark spots surrounded by white spots and dark rings, symmetrically arranged; and plain, light brown dorsal and caudal fins.

Such a disjunct distribution is however also found among other species present in Oman coastal waters. Among bony fishes, sparids are probably the best example, with *Diplodus capensis* (Smith, 1844) from the Southern Africa Region and *Diplodus cervinus omanensis* Bauchot & Bianchi, 1984, a subspecies of the Eastern Atlantic *Diplodus cervinus* (Lowe, 1838), and *Lithognathus mormyrus* (Linnaeus, 1758), from the Eastern Atlantic and non-tropical western Indian Ocean. Among sciaenids, *Umbrina canariensis* Valenciennes, 1843 and *Umbrina ronchus* Valenciennes, 1843, if they effectively correspond to the right species (Sasaki, 1996; Hutchings and Griffiths, 2005), are both also present in the Eastern Atlantic. The case of the grouper *Epinephelus marginatus*

(Lowe, 1834) is also fascinating, being recorded from the Southwestern and Eastern Atlantic, the Mediterranean, the South African Region, and Oman (Randall, 1995). Among benthic elasmobranchs, *Heterodontus ramalheira* (Smith, 1949) is recorded from the Southern Africa Region, Somalia and Oman (Bonfil and Abdallah, 2004). These examples of disjunct distributions, similar to the one we suggest here for *Rhinobatos annulatus*, make us feel confident in our specific attribution, in the absence of a preserved specimen, which would allow further investigations. Nevertheless this biogeographic dilemma deserves a detailed investigation.

Rhinobatos salalah Randall & Compagno, 1995

Material examined. - One male caught with a gillnet at Ra's al-Jinz on 27 Jan. 2008 (Fig. 4). The skeleton (vertebrae) is housed in the MNHN fish osteological collection under the number MNHN:ICOS-00207. Another, smaller, specimen was sighted at the same place among fish landings but could not be saved.

Morphometric data. - 511 mm TL, 180 mm DW, 68 mm POL, 495 g TW.

Distribution. - The Salalah guitarfish has been described from the southwestern Oman city of Salalah and seems to still be known only from the holotype (Bonfil and Abdallah, 2004). Henderson *et al*. (2007) do not report this species. The present record extends its range to the East, to the Gulf of Oman. The photograph appearing in FishBase (2007) shows a specimen from Karachi (Pakistan), which seems to be *R. salalah*, however it comes from a large regional fish market, and its precise origin is difficult to determine.

Rhinobatos salalah is easy to distinguish from other guitarfishes of Oman because of its broad blunt snout and heart-shaped disc (Randall and Compagno, 1995). Its colour pattern, almost symmetrical pale spots over a light brown body, is typical of this species in the area. Disc width 2.84 in total length (2.9 in holotype), preoral length 13.3% of TL (13.8 in holotype).

Gymnura poecilura (Shaw, 1804)

Material examined. - One male observed at Mutrah fish market, Muscat on 15 Jan. 2008 (Fig. 5). Not preserved.

Morphometric data. - Approximately 300 mm DW.

Distribution. - The long-tail butterfly ray is a wide-ranging north Indo-Pacific species, found from the Red Sea eastward to the Society Islands (French Polynesia), China, and southern Japan (Bonfil and Abdallah, 2004), and also in the Persian Gulf (Carpenter *et al*., 1997).

This is the only species of the genus in the Arabian Sea. It is easily recognizable by its tail, which is distinctly crossbanded. The present specimen was remarkable because it presented an anomalous absence of its rostrum (Fig. 5). As far as we know, this kind of anomaly has not been reported for butterfly rays. Among elasmobranchs many kinds of abnormalities are documented, for example among batoids Templeman (1965) mentions a case of snout abnormality in *Raja laevis* (= *Dipturus laevis*), and Luther (1961) describes the blunt swollen snout of a *Rhynchobatus djiddensis*. *Gymnura poecilura* seems to have a certain propensity for morphological anomalies, as several cases have been cited in the literature (Day, 1878; Bennet, 1964; Easwaran, 1967). All represent various degrees of separation of the pectoral fins from the head, resulting in the formation of horns on either side of head; but the head itself has a more or less normal aspect, while in the present case the body is normal and it is the absence of a snout that makes the head abnormal.

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